Community Impacts: Adding Value to Analysis and Management (Mark Shrimpton and Keith Storey)

[*The following is an edited version of the verbatim transcript of Dr. Shrimpton's and Dr. Storey's joint presentation.]*

Mark Shrimpton

Our title, "Community Impacts, Adding Value to Analysis and Management", reflects our concerns about the value of the sorts of things that are done in the name of socio-economic impact assessment. Specifically, what we want to do today is focus on uncertainty and its implications with respect to community impact studies. We are dealing with the oil industry, which is a very dynamic industry, and this and other factors present significant difficulties with respect to planning and management. The second thing we want to talk about is the need for innovative thinking and, indeed, rethinking about how we approach community impacts and their management.

Keith Storey and I have spent the last 30 years in Newfoundland, Canada, the closest part of North America to Europe. Newfoundland is a largely rural province with a population of about half a million. For the first 400 years of economic activity it was fisheries dependent, but there is now also an oil industry. The first well was drilled in 1966, and the first major discovery was in 1979, with production beginning in 1997. In the first year of operation, production from the Hibernia field was worth 6 percent of provincial gross domestic product. Oil production follows the North Sea model, with very large fields in a hostile environment. It is not deep water, but there is challenging weather and the Labrador Current carries multi-million-ton icebergs.

Keith and I have worked as academics and as consultants, looking at various aspects of the oil industry. Often we have studied what is going on elsewhere in the world to try to learn from, in particular, the North Sea -- Scotland and Norway -- and apply that to our thinking about Newfoundland. Increasingly we have also taken what we have learned to various other parts of the world, primarily frontier regions like the Falkland Islands and the Faroe Islands. Such transferring of experience and expertise, learning about what happened elsewhere and trying to make sense of it, has been very important to us.

But it was soon apparent that in seeking to usefully learn from experience elsewhere we were dealing with very real complexity. Also, we found there was a general naivete on the part of government officials, community representatives, and local business people about how to use information from elsewhere. In the early 1980's, people very commonly went to Aberdeen, Scotland, and came back and said "Well we've been to Aberdeen, and the oil industry had X effect there and, therefore, it will have X effect in St. John's (Newfoundland's capital)." This

was rather simplistic and rather naive, but it continues to be common when comparative research is being done.

We certainly think comparative research is an important tool in forecasting community impacts, and it is a challenging one. In particular, it is important to recognize and fully understand the implications of the fact that community impacts depend on several factors: What's happening in the local context? What is the local context? What are the characteristics of the place and people? What is the industrial context? What are the characteristics of the industry and its activity? And then in all of this, we must include community and industry and what they do to manage the effects of oil development. These are, of course, dynamic effects. Communities differ from one another and change with time. The industry is also differentiated.

These are not remarkable observations, but the reality is that quite often, when planning for change, people have failed to appreciate these facts. The oil industry is particularly dynamic when compared with other industries and other forms of activity. Exploration is highly mobile, and the entire industry is highly subject to technological and organizational change and very vulnerable to resource price fluctuations in all phases.

So what? Well, in terms of this presentation, we would say that there is a need for care in forecasting community impacts, that there is inherent high uncertainty with respect to forecasting and there is a consequent need for innovation and flexibility in planning and management.

For example, let us consider Aberdeen versus St. John's, a comparison with which we had some dealings in the early days and which has impressed itself upon us. When we were looking at Aberdeen, we were told that it had great difficulty absorbing the very rapid growth that resulted from the oil industry. When we looked at our own situation in Newfoundland, however, we found that in its terms the anticipated growth was relatively small. What had happened was that Aberdeen had been essentially stagnant for many years, and, hence, when there was some growth, it created great problems. There was little capacity in the system to absorb growth, and so it caused a lot of problems. In Newfoundland, pre-oil, we had high if declining rates of growth so a little extra growth because of oil did not prove problematic.

It is also important to look at the degree to which local industry and people are going to get involved in the oil industry in various ways, such as contracting to, delivering to, or working in the industry. Specifically, how industrialized or relatively unindustrialized an economy are we talking about? What infrastructure is available to serve the industry? And is there a labor surplus? Is there some capacity there to serve the industry? Or is it like one of the other places we have worked, the Falkland Islands, where the total population is just over 2,000 and, at the time of checking, there were seven unemployed people? There is plainly little

capacity there to work in the industry, which has implications for how much involvement there could be in the industry and, of course, for immigration.

We think as social scientists we are all pretty much aware of the significance of the socioeconomic setting for community impacts. It is worthwhile, though to say something about aspirations. Newfoundland wanted jobs, needed jobs. The economy has been in a bad way for decades and while people have been very concerned about protecting the fishery and the local culture, they were also very concerned to be involved in the industry and create jobs from it. The Faroe Islands in the 1980's and early 1990's were quite the opposite. The Faroes, for those of you who are not familiar with them, are between the Shetland Islands, off the north coast of Scotland, and Iceland. (When people talk about exploration west of the Shetlands, they are talking about east of the Faroes.) But the Faroes were not much interested in oil activity, thank you very much. They had an economy moving along quite nicely, they fished in what they advertised as the cleanest waters in the world. Why would they want oil exploration? However, in the late 1980's and early 1990's, the fish disappeared, economic crisis ensued, banks failed and suddenly there was greater interest in any means of delivering economic opportunities.

Aspirations, of course, vary within and between communities. We have recently had some involvement with British Columbia where for the last 10 years there has been, as in some other places on the west coast of our continent, a moratorium on drilling. But due to the poor state of the economy, unemployed loggers, mill-workers, et cetera, are pushing for the moratorium to be removed. Environmentalists obviously are very unhappy with this and want to fight for the maintenance of the moratorium. Other groups, such as aboriginal groups, have their own – varying – agendas, interests, and concerns.

Community impacts will be influenced by local experience. Experience of the oil industry shapes aspirations and expectations. We in Newfoundland and other areas have gone through a learning curve, developing experience and moving ahead from perhaps some very naive early expectations that the streets would be paved with gold, but it would not be safe to walk them.

Management is a community issue. How sophisticated is local management with respect to the industry and management tools? We think one of the things we can say in the Newfoundland context is that the oil industry stimulated greater sophistication in various levels of government.

It is also important to look at the industry and how it varies over its phases of activity, beginning with exploration, which may be short- or long-term, very variable, very uncertain and very mobile. Then there is the development phase, then operations. The latter is obviously longer-term, relatively stable, with opportunities for high local involvement. And, of course, in any mature region you are not talking about any one of these but a combination of them. We have

already talked about how technology changes over time. The industry has a very high rate of innovation, and this has consequences for local requirements and other community effects.

It is very interesting to hear people already talking about organizational change, especially because most of this has taken place among the independents. We have seen dramatic changes in the industry, and the industry today is not the industry of 10 years ago. But what we are thinking about here is downsizing with an increasing amount of work being subcontracted out. We are talking about, for instance, mergers of projects, alliancing – sharing the risks, sharing the rewards, by bringing different companies, including local-area companies, into an alliance. Since we are talking in terms of community impacts, perhaps the most important development is asset sharing. In North Sea parlance, this is called development of sector clubs. Essentially you have fewer and larger facilities because companies share their supply bases, their pipe yards, their heliports. When exploration in Newfoundland was at its peak 10 or 12 years ago, there were five supply bases in operation. There is now only one, which is supporting the current production, project development and exploration.

Community effects are clearly influenced by industry management in the context of the larger regulatory framework. Management approaches vary between companies and over time. One example of differences between companies has been very interesting of late. We have been working in Saint-Pierre et Miquelon, two small islands off the south coast of Newfoundland which are sovereign parts of the French state. We have been dealing with two different oil companies, one which was the lead in the project and the other which has now farmed in the majority share. It is like working with two quite different universes of people in terms of the company culture, especially with respect to community involvement, benefits, approaches and so on. And negotiating that change in company culture has been troubling at times.

Management also changes over time. Within the Hibernia oilfield project in the pre-approval stage, there was a very high emphasis on seeing what would be done to deliver benefits, to care for the communities. During construction, a different set of people move in; their priority was pouring concrete, and anything else just got in the way and was given a very low priority. Now, we are into operations. We have an operating company, Hibernia Management and Development Company. It will be there, and a good corporate citizen, for more than 20 years. So over time changes occur within corporations. This includes change because of turnover, with people leaving the operation, and people being relocated. This complicates, not least, relations with communities.

This is all very interesting, but what is the significance at the end of the day? In planning for any type of activity, there will always be a relatively high level of uncertainty about community effects. However, this is especially the case with oil industry activity, particularly during exploration. Compared with other industries

and activities there are far greater difficulties and dangers in transferring experience for planning purposes. There are numerous cases of inappropriate expectations leading to significant inappropriate speculative responses; for example, housing prices going up not because of any real demand but from the expectation that housing prices will go up. Or government officials re-zoning land and encouraging the development of subdivisions, or the private sector developing subdivisions out of an expectation which is not justified. Or inappropriate and unnecessary training or investments undertaken in response to expectations respecting social impacts; for example, when people call for more policing because they expect increased crime rates.

It is clearly important to understand these issues and educate stakeholders with respect to them, so they understand the complexity and the dynamics involved. Education should include the government, the public and the business community. We need to recognize the underlying uncertainty and plan and manage with that in mind. Keith's part of the presentation addresses these issues of planning and management.

Keith Storey

If we look at the impact assessment process, which has now been in place in a formal sense for perhaps some 30 years, a great deal of change has taken place. And what we see is that a lot of progress is being made. We go back to the 1980's when it was recognized that the extensive data-collection -- daisy-counting exercises – needed to be streamlined, leading to the introduction of scoping, which made a significant difference. If we turn to the 1990's, people are grappling with cumulative impacts and how we incorporate traditional knowledge into impact assessment. Generally, we have made a lot of progress.

But at the same time, we think there is a need not only to look forward but also to look at some of the things that we have done in the past. Do they do the job? Are they still relevant and appropriate in the ways that they once were? And, given the incremental changes that have taken place, do the various elements of the impact assessment process fit together properly? We think that there may be a need to review some of these situations, to reevaluate the utility of some of the tools in our assessment kit bag and to consider how, in fact, we might address the principles of uncertainty referred to above.

I'm going to discuss three elements here in order to illustrate that there are some traditional components of the impact assessment process that we need to look at again, and to illustrate the need to make sure that we are coordinating those elements properly. These three elements are:

Assessment methods. Here we want to emphasize the whole question of forecasting. We are not very good at forecasting. We are often wrong. And the issue here is that we often seem to be concerned with trying to be more

accurate, to get better forecasts. In our view, that is very often a misplaced effort, misplaced energy. It is often said that close enough is good enough in horseshoes and hand grenades, and this is often the case in social impact assessment as well. That does not mean it is bad science. It just means to say that we are recognizing the difficulties of accurate forecasting and prediction and have to deal with the problem in some rather different ways.

Impact management. We do not like the word mitigation because it always implies reducing something. We prefer to talk about optimization because there are some things you would like to increase rather than decrease. The word mitigation seems to be a holdover from the biophysical sciences where they are always trying to make things rather less damaging. But that is not always true in social and economic impact assessment. What I am emphasizing here is that it is imperative, if we are going to do a good job with impact management, that we are aware of the kind of management objectives that we are trying to achieve and get some agreement upon them.

Monitoring and auditing. We often do not do it very well and we often do not do it at all. It is a fundamental element, and we need to address this in some rather different ways.

Let me turn quickly to the assessment methods issue and offer you an example concerning a place called Argentia in Newfoundland. It is a former U.S. Naval base that closed in 1989. The plan is to build a smelter-refinery for a very large nickel mine in Northern Labrador. The climatic conditions are too severe there to put in a smelter, so the proponent wants to put it in a less-hostile environment. There was a suggested demand for 900 workers at this smelter location. The local context is that the regional population of about 7,000 was declining. The issue, as far as the community is concerned, is: what kinds of demands is this project going to place on our infrastructure? This is absolutely imperative. We need to know the answers to this so we can plan accordingly.

Traditionally, the approach would be to develop a predictive model. Increasingly we have found in these kinds of projects that, while we should not eliminate the idea of predictive modeling, we should pay more attention to what is known. And what is known is the capacity of the community. To what extent can the community accommodate these sorts of changes?

Start from the predicted 900 workforce. We ask: How many of those will be local? How many will come in? How many of those coming in will bring families? What kinds of housing demands will result? There is a linked series of assumptions and the probability of error is very high. So how do we deal with that kind of problem? Well, our approach is what I would describe as moving from a source-demand emphasis to one where we are talking about destination-supply or destination-capacity. Without the project, the demand for housing is very low, ten units a year. It is simply replacement.

Argentia had and has a declining population. It was estimated that the project would result in between 900 to 1650 people coming in, and a demand for housing in the order of 374 to 593 units. See the precision here, but at the same time there is a wide range in the estimate. We are fairly comfortable that the demand is going to be somewhere in this range but, beyond that ballpark, there is nothing more of which we can be sure. So how much use is that to the community? Well, it can look at its capacity and conclude: 'Well, we've got 300 serviced lots there already. We have another 57 units on the former military base that we could utilize for accommodation if necessary. And we have lots of raw land available in the community should we need to do this.' The conclusion is that the existing capacity exceeds probable demands, even given the higher-level predictions. But it is, of course, imperative that a management plan be put in place and monitoring occur to see to what extent one needs to bring new housing on stream as the project proceeds.

This is not rocket science. However, the capacity focus is very often missing from assessments and much of the academic concern with impact assessment focuses on trying to refine the difference between the low and high end scenarios to get more precise, more 'accurate' readings. And we do not think that is necessarily a very useful exercise.

Let me turn next to the subject of impact management. Mark has already referred to Hibernia, a true mega-project. In this particular case, we would like to emphasize the relationship between the assessment approach and management. This is a construction project, and so the boom-bust model is very relevant. We think that in this and other cases, even where that is not a relevant model, impact management can be successfully achieved providing one is willing to identify the objectives that one is trying to achieve.

Hibernia involved a major construction project at a green field site in a rural environment. The peak employment estimated for the construction exercise was in the order of 3600 people, while the largest nearby community had a population of less than a thousand. There was concern that the communities could not accommodate the significant influx of workers, and so a decision was made – in a collective fashion between the local communities, the proponents of this particular project and local governments – to attempt to minimize community disruption. By this we mean minimizing the effects on housing, other infrastructure, demand for services, crime, alcohol, drug abuse and so on and so forth. The approach adopted was one of isolation-insulation. Isolation by creating a work camp at a point some distance from any of these communities and insulating the communities from that system.

The project was a big one; at one point, the largest construction project in North America. It lasted from 1990 to 1997 and cost $6 billion. Construction was taking place in an environment where we had very small communities with limited

infrastructure and capacity to absorb any additional infrastructure once this particular boom had passed. The solution was to build a camp. This was designed to accommodate, at maximum, about 3,000 people. It provided all kinds of goods and services. In fact, all meals and accommodations were provided free. So there was a cost to this, but that was a trade-off that one has to make. The facilities there were better than those in the local communities and, essentially, you were creating an environment where people were trying to get in rather than get out.

What were the outcomes? Needless to say, the original estimates of employment were significantly wrong. Predicted at 3,600, in point of fact it peaked at nearly 6,000 people. But because of the strategy adopted, where uncertainty was recognized and flexibility was built into the management system, accommodation on site could be relatively easily increased. There were, in fact, minimal temporary increases in housing costs and demands on local services and infrastructure. Three surveys were undertaken, one before the project started, one soon after it started and one near its completion. Fifty-one percent of the respondents to the first survey thought that crime was going to be a very serious problem. As a result of the management strategy, crime did not appear as an issue for any residents in the subsequent surveys. By adopting this strategy, a whole series of problems was avoided. Impact management was very successful in this case.

Let me turn to the last point, monitoring and auditing. We all know that the follow-up process can yield significant benefits. In practice, however, it is very rarely done, and when it is done it is often not done very well. One feature of monitoring and auditing is the emphasis on predictive technique audits. If you look at the literature, you will see that a number of aspects of auditing are concerned with whether what was predicted actually happened. Well, we think this is often a waste of time, for two reasons. First, very often you cannot do it because the data do not allow you to compare what was forecast with what actually happened. Second, very rarely is the project that was the basis for predictions the one that actually happens. Projects are dynamic, the impact assessment process tends to be very static, and you cannot match the two very easily.

Let me give an example from the literature. What we did was to adapt Buckley's (1991) method of looking at these predictive technique audits. We took the Socio-economic Impact Statement for the Hibernia project where we found 143 socio-economic predictions. When we looked in more detail, only 86 of them were suitable for some kind of audit. (What do I mean by suitable? Well, in some cases the project had changed so the predictions were not relevant. In others, the predictions had not yet happened so they were sometime in the future. In some cases the predictions were so vague as to be useless, and so on and so forth.)

Unfortunately, of the 86 suitable for audit, there was no monitoring for 67 of these. And for another 11 the monitoring was inadequate -- for, example, it measured the wrong thing at the wrong time at the wrong place, so we could not compare what was predicted with what actually happened. We finished with eight auditable, if there is such a word, predictions. Of these, six were significantly wrong. And one of those was one I have already talked about, the predicted employment.

The conclusion that we draw is that either the impact assessment really was not very good at predicting the eventual outcomes of this project, or that the predictive audit technique approach is virtually useless. We cannot do it because the predictive statements are often of very poor quality and, as I indicated, there were very poor monitoring data. But the important thing here is that the results from that exercise did not reflect reality at all. The reality is that the Hibernia project was very successful in terms of managing community impacts, but that was not revealed by this kind of approach.

What we need to do in auditing is get away from this concern with predictive accuracy and prediction verification and move towards an exercise in which we ask the question: did we achieve the objectives that we set out to in terms of the management process? That implies that we know what those objectives were. And that implies that, when we do the assessment in the first place, management strategies and monitoring and auditing are all considered at the earliest possible stage. Monitoring and auditing are not simply add-ons. We need to go back and make sure that they are integral elements of the assessment process.

Let me conclude. Mark has talked about learning from experience. It is, obviously, very important. But the point is that the lessons that we draw from our context do not necessarily apply in the Gulf of Mexico, nor do those from the Gulf necessarily apply in Alaska. The idea was introduced that there may be a lot of commonalities. Maybe there are -- but we've got to be extremely cautious as to how we look at them and how we apply ‘lessons’ from one time to another and from one place to another.

We need to be able to incorporate uncertainty in our processes, to adopt an adaptive management approach. If we go back to Hollings' work in the late 1970's, which I think is highly underrated, we have to incorporate those ideas if we are to add value to the socio-economic impact assessment process and make things relevant and useful to the communities that are going to be affected.

We need to add value, to add utility, to our assessment methods. We hope that the examples we have given you illustrate the need and go some way to addressing it. More important is that one of the things we have to recognize if we are going to be useful is that socio-economic impact assessment cannot be value-free. We have to be looking at what kinds of objectives the communities

are trying to achieve, and we think we need to have a much more objectives-based focus than in the past.

Thank you.

Works Cited:

Buckley, R. (1991) *Perspectives in Environmental Planning*, New York, NY: Springer-Verlag Berlin, Heidelberg.

Holling, C. S. (1978) *Adaptive Environmental Assessment and Management*, Chichester, Wiley.